Jordan Valley Authority

Business Process Mapping: Inventory and Fixed Assets Business Cycle

Financial Accounting System Program

July 2000

OSC Member FAS Team Member





Business Process Mapping Reports:

- General Process Mapping
- Expenditure Business Cycle
- √ Inventory and Fixed Assets Business Cycle
- Revenue Business Cycle
- Budget and Accounting Business Cycle
- Workshop Business Cycle
- Payroll and Personnel Cycle



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ACRONYMS

AP Accounts Payable

AR Accounts Receivable

CFI Call for Information

COA Chart of Accounts

FA Fixed Assets

GL General Ledger

H/W Hardware

IC Inventory Control

JC Job Costing

MOF Ministry of Finance

OE Order Entry

PO Purchase Order

RDBMS Relation Database

Management System

S/W Software

WIP Work In Progress

ARABIC EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

The Jordan Valley Authority (JVA) is planning to implement a new, accrual-based finanacial accounting system (FAS) to provide a tool for tracking, recording and accessing complete financial information so it can operate as an autonomous, self-sustaining entity. Like other government agencies in Jordan, JVA currently uses a cash-based accounting system. Two major differences between cash-based and accrual-based accounting are the methods of recording inventory and fixed assets (those with a useful life of more than one year).

In cash-based accounting, the purchase of inventory is recorded as an expenditure whenever the vendor's invoice is paid. In accrual-based accounting, the purchase is recorded as a current asset (inventory) when items are received and then as an expense when the items are used. Likewise, cash-based accounting treats the purchase of fixed assets as expenditures whenever the cost is paid. Accrual-based accounting, on the other hand, records the cost in a fixed assets account whenever the asset is ready for use and then depreciates it over its useful life. Whenever an asset is constructed over a period of time (e.g. dams, buildings), the construction cost is capitalized (recorded in fixed asset accounts) when the asset is ready for use and is then depreciated over its useful life.

Inventory and fixed assets are two different business cycles. JVA has no accounting records that reflect the value of store inventories or of fixed assets, but it does, however, maintain records that keep track of thinventory and of some fixed assets referred to as custody items. Because of this practice, the inventory cycle and the fixed assets cycle are addressed together in this document.

JVA has seventeen stores scattered among different directorates and locations. The Supplies Directorate at headquarters controls all stores through its Stores Division and the stores controller at the Deir Alla Central Store. The central store records unit is the controlling unit for all JVA stores. This unit manually maintains parallel records for most stores of the Northern and Middle Governate, but not for the Southern Ghors, Wadi Al-Arab Dam, King Talal Dam, Amman, or spare parts stores.

Store procedures do not include links or coordination between the Northern and Middle Governate stores and the Southern Governate store. Whenever a storekeeper needs to check if an item is in stock at other stores, he has to use the telephone.

It is estimated there are one hundred items in the Amman store and around fourteen thousand items in the workshop stores. Because it uses cash-based accounting, JVA has no records that reflect the value of store inventories.

Each store maintains manual records for items in the form of ledgers or index cards (Kardex) that show item codes, description, location, purchase price, quantity in, quantity out, transaction date and reference, and quantity balance. The records are updated using store issuing and receiving vouchers.

As a control procedure at the end of each year, several committees are formed by the Secretary General to count stock on hand at all stores. The committees prepare inventory sheets and submit them to the Secretary General with a report. The Secretary General sends the reports to the Supplies Directorate. One copy of the inventory is filed

at each store. No monetary value is assigned to the sheets; however, item costs can be determined by reference to receiving vouchers or copies of vendor invoices filed at stores.

JVA does not maintain fixed asset registers that show the cost of each item, the accumulated depreciation and the net book value. Instead, store records show the fixed assets that were received by each store and delivered to a user (staff). Fixed assets other than construction are treated as supplies or inventory items and are referred to as custody items, i.e., those assigned to an individual who will be accountable for them until released. All such assets are received at stores and then distributed to the users (staff). Defective assets are returned to JVA stores, and, after approval, are sold, as are obsolete items, through a committee formed by the Secretary General.

Assets are acquired through purchase, construction or donation. The purchase of a fixed asset is processed in the same way as any other purchase. The amounts paid for fixed assets are classified as capital expenditures and are not capitalized, so no depreciation is calculated or recorded.

The construction of a fixed asset (e.g. dam or building) is done through a contractor and is overseen by the appropriate JVA directorate. Payment for construction is recorded as a capital expenditure; the total cost is not accumulated from inception.

The central workshop at Al Fanoush keeps files for JVA vehicles. These files provide information about each vehicle's purchase price, date of purchase, maintenance history and running cost. (The SGWA workshop maintains the same kind of files for SGWA Governate vehicles.) The Al-Fanoush staff has been trying to develop a stores and job costing system for more than five years. Most of the spare parts data has been entered into the system, but it is still being tested. All other store records are kept manually.

In order to implement the new FAS successfully, we recommend the following:

- The central store records unit should maintain records for the SGWA, King Talal Dam, Wadi Al-Arab Dam, Amman, and the spare parts stores for internal control purposes.
- Small stores and those located near others should be merged. Decreasing the number of stores will facilitate the record and control procedures and the computerization of inventory.
- The cost of inventory items should be included in the year-end count sheets.
- Fixed asset costs must be recorded in asset accounts and depreciated over the asset's useful life. A team of JVA staff in coordination with FORWARD should start collecting fixed asset data.

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CHAPTER 1 INTRODUCTION

Two major differences between cash-based and accrual-based accounting are the methods of recording inventory and fixed assets. (Fixed assets are those with a useful life of more than one year.) In cash-based accounting, the purchase of inventory is recorded as an expenditure whenever the vendor's invoice is paid. In accrual-based accounting, the purchase is recorded as a current asset (inventory) when items are received and then as an expense when the items are used. Likewise, cash-based accounting treats the purchase of fixed assets as expenditures whenever the cost is paid. Accrual-based accounting, on the other hand, records the cost in a fixed assets account whenever the asset is ready for use and then depreciates it over its useful life. When an asset is constructed over a period of time (e.g. dams, buildings), the construction cost is capitalized (recorded in fixed asset account) when the asset is ready for use and is then depreciated over its useful life.

Inventory and fixed assets are two different business cycles. The inventory cycle involves handling and recording stored items. It includes the business activities of receiving, storing, and issuing supplies, and of maintaining inventory records. The fixed assets cycle includes the business activities of acquiring, depreciating, disposing and managing fixed assets in addition to maintaining fixed asset records.

The Jordan Valley Authority, like other government agencies, uses cash-based accounting and hence records inventory and fixed asset purchases as expenditures whenever the costs are paid. JVA has no accounting records that reflect the value of store inventories or of fixed assets. JVA does, however, maintain records at its stores and at the central workshop to keep track of the quantity of items in stock and of some fixed assets referred to as custody items. Because of this practice, both the inventory cycle and the fixed assets cycle are addressed in this document.

Inventory and store procedures were discussed briefly in "General Process Mapping." This document describes store procedures and records in more detail and also describes fixed asset procedures. Each activity is described in the form of an annotated flow chart. Exceptions are labeled as such and are explained. They are not reflected in the flow charts as it would make them too complicated. Computer use, which applies to inventory only, is also discussed, and recommendations are made for changes in procedures in order to improve internal control and to successfully implement the new finanacial accounting system (FAS). The main objective of the FAS is to provide a tool for tracking, recording and accessing complete financial information to help JVA to operate as an autonomous, self-sustaining entity.

CHAPTER 2 INVENTORY CYCLE

2.1 Overview

JVA has seventeen stores scattered among different directorates and locations. Only one small store is located in Amman; the rest are in the Jordan Valley. The following is a list of JVA stores:

Store Name Location

1. Amman Directorate of Supplies-Amman

Northern and Middle Governates:

2.	Wadi Al-Arab Dam	Wadi Al-Arab dam
۷.		
3.	Northern Directorate (Kle'aat)	Northern Directorate offices
4.	King Talal Dam	King Talal Dam
5.	Deir Alla Central (Al-Reweha)	Deir Alla
6.	Land Drainage	Deir Alla
7.	General Items (Al-Fanoosh)	Workshop Directorate
8.	Vehicles and Machinery Spare Parts (Al-Fanoos	sh)
		Workshop Directorate
9.	Environment and Laboratories	Deir Alla
10.	Al-Karameh Dam	Al-Karameh Dam

11. Al-Karamen Dam

11. Al-Karamen Dam

12. Al-Karamen Dam

13. Sho'aib Dam

Al-Karamen Dam

A

Southern Governate:

14.	Southern Ghors (SGWA) – General Store	Al-Safi Ghor
15.	Southern Ghors (SGWA) – Spare Parts Store	Al-Safi Ghor
16.	Southern Ghors (SGWA) – Irrigation & Drainage Store	Al-Safi Ghor
17.	Southern Ghors (SGWA) – disposal Store	Al-Safi Ghor

The Supplies Directorate at headquarters controls all stores through its Stores Division and the stores controller at the Deir Alla Central Store. Each store has a staff of one or more storekeepers, a store clerk and workers, and each is divided into sections and shelves. The sections are assigned alphabetical codes, and the shelves are numbered serially. The section code and shelf number define the location of an item.

Store procedures do not include links or coordination between the Northern and Middle Governate stores and the Southern Governate store. Whenever a storekeeper needs to check if an item is in stock at other stores, he has to use the telephone.

The number of items varies from one store to another. It is estimated there are one hundred items in the Amman store and around fourteen thousand items in the workshop stores. There is no official figure on the total monetary value of items in JVA stores.

2.2 Maintaining Inventory Records

Each store maintains item records manually in the form of ledgers or index cards (Kardex). Each item has either an index card or a page in a ledger. The records show item codes, description, location, purchase price, quantity in, quantity out, transaction date and reference, and quantity balance. The records are updated using store issuing and receiving vouchers. Spare parts for vehicles and machinery are coded using the manufacturer's part number; other items are described but not coded.

The central store records unit at the Deir Alla Store is the controlling unit for all JVA stores. This unit maintains additional records for most stores of the Northern and Middle Governate. The records are maintained manually and in parallel with the existing records at each store. These records do not include records for the Southern Ghors store, the Wadi Al-Arab Dam store, the King Talal Dam store, the Amman store, or the spare parts store (Al Fanoush).

The stores controller conducts regular visits to each store for check up and control purposes, except for the SGWA store. He also collects copies of the issuing and receiving vouchers to update central stores records.

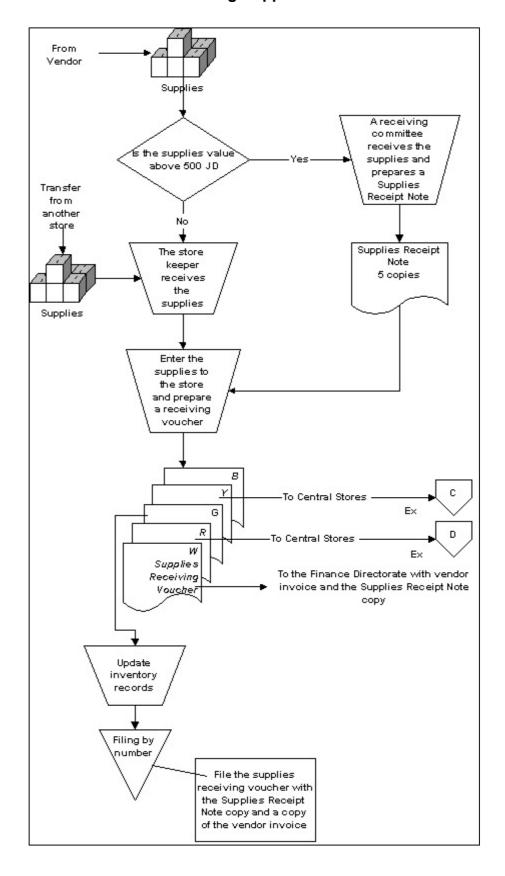
2.3 Receiving Supplies

Figure 2.1 illustrates the procedure for receiving supplies. It is the same as that in expenditure cycle.

- The storekeeper has the authority to receive purchased supplies with an invoice total value less than JD 500. If the value is above JD 500, a receiving committee formed by the Secretary General receives the supplies and prepares a "supplies receipt note" with five copies.
- The storekeeper may receive supplies from other JVA stores or returned supplies from directorates regardless of their value.
- The storekeeper receives supplies directly or through the receiving committee and
 prepares a "receiving voucher" with four carbon copies: red, green, yellow and blue.
 The voucher is numbered serially and states the date, purchase request number,
 source, item description, quantity, unit, unit price, total price and ledger page
 number.
- The original voucher (white) is sent to the Finance Directorate with the vendor's
 invoice and a copy of the supplies receipt note. If the supplies are transferred from
 another store or returned from a directorate, the original is given to the party who
 delivered the supplies.
- The storekeeper updates the inventory records and files the green copy of the receiving voucher by number at the store.
- The red and yellow copies are sent to the central store records unit where they are recorded in the store control and custody item records.

Exception: The stores in Southern Ghors, Wadi Al-Arab Dam, King Talal Dam and Amman don't send copies of the receiving vouchers to the central store records unit. They also keep their own custody item records. The spare parts store sends only the yellow copy of the receiving voucher to the central store records unit for custody item records. Because the central store records unit does not maintain records for these stores, it controls them through the stores controller visits only.

Figure 2.1 Receiving Supplies



2.4 Issuing Supplies

Figure 2.2 below illustrates the process of issuing supplies from stores.

- The storekeeper receives a "supplies request form" from the requesting department.
- If the supplies are not available, the storekeeper signs the request form and returns it to the requesting department. If the requested supplies are available, the storekeeper prepares a "supplies issue voucher" with four carbon copies: red, green, yellow and blue.
- The requesting department receives the supplies and the original (white) of the voucher.
- The storekeeper updates the store records and files by number the green copy of the voucher which is attached to the supplies request form.
- The red and yellow copies are sent to the central store records unit where the red
 copy is recorded in the issuing store records and the yellow copy is recorded in the
 custody item records. Both are filed by number.

Central Stores Records Unit Store polier Request From Requesting Department Department avaitable Record in Filling by the Custody Prepare Supplies baue items Ledge Supplies Record in the Issuing Store Ledger Filing by number with the supplies requestform

Figure 2.2 Issuing Supplies

2.5 Yearly Stock Count

As a control procedure at the end of each year, several committees are formed by the Secretary General to count stock on hand at all stores. Each committee conducts a count at one store and compares the existing items with the store's records. The committees prepare inventory sheets and submit them to the Secretary General with a report. The Secretary General sends the reports to the Supplies Directorate. One copy of the inventory is filed at each store.

The inventories show item descriptions and the quantities available in the stores on the date of the count. No monetary value is assigned to the sheets; however, item costs can be determined by reference to receiving vouchers or copies of vendor invoices filed at stores.

The Supplies Directorate prepares an inventory report and submits it to the General Supplies Department through the Secretary General. The report defines obsolete or defective items and assets at the stores. Disposal of inventory items specially Vehicles and machinery and fixed assets must be approved by the General Supplies Department and must be done by a special committee. Defective or obsolete items and assets are gathered at one store. A committee formed by the Secretary General verifies that they are indeed defective or obsolete and prepares lists of the items. After the Secretary General and the General Supplies Department approve the lists, a committee which includes a member from the audit bureau is formed to sell the items.

The sale can be done either by sealed bids or by auction. The selling committee advertises a request for bids in the newspaper. The committee selects the buyer and gets the approval of the Secretary General. The buyer pays the amount specified to the central cashier at headquarters against a receipt voucher and then receives the items from the stores. The proceeds from the sale are deposited in JVA revenue account at the Central Bank of Jordan and are then transferred to the Ministry of Finance. The proceeds are recorded in the cashier's journal as revenue; no other entries concerning item costs are made.

CHAPTER 3 FIXED ASSETS CYCLE

As mentioned previously, fixed assets are those with usable lives of more than one year, such as, buildings, vehicles and furniture. The amounts paid for fixed assets are classified as capital expenditures. Fixed asset records in the sense of accounting subledgers do not exist at JVA.

3.1 Acquiring Fixed Assets

Fixed assets are acquired through donation, purchase, or construction. Donated assets, such as vehicles or spare parts, are received by the stores and treated as custody items without assigning them a monetary value unless the real value is known. The purchase of a fixed asset is processed in the same way as any other purchase. (Purchasing procedures are described in "Business Process Mapping: Expenditure Cycle.") The construction of a fixed asset (e.g. dam or building) is done through a contractor and is overseen by the appropriate JVA directorate. Typically on large projects, a consultant manages the project and approves invoices which are processed through the directorate responsible for the project. JVA staff may also construct small projects. In both cases, the payment for construction is recorded as a capital expenditure; the total cost is not accumulated from inception. Fixed asset construction maybe funded by the treasury, by loans or by both. The contractor payment procedure and recording are the same as described in the expenditure cycle. The lender transfers the funds to JVA according to the loan contract terms and conditions.

3.2 Depreciating Fixed Assets

As stated above, JVA uses cash-based accounting, thus the cost of acquiring fixed assets is recorded as a capital expenditure and is not capitalized. Consequently, no depreciation is calculated or recorded.

3.3 Disposing of Fixed Assets

Defective vehicles and machinery assets are returned to JVA stores. Each year the Supplies Directorate submits a report to the General Supplies Department with a list of such assets. After approval, the assets are sold through a committee formed by the Secretary General in a process similar to that of the sale of defective/obsolete inventory items s mentioned above.

According to the General Supplies Law, the disposition of assets or supplies with a original purchase price up to JD 500 must be recommended by the Secretary General and approved by the Ministry of Water and Irrigation (MWI). For assets or supplies with a purchase price equal to or greater than JD 500 but less than JD 5,000, the disposition must be recommended by the MWI and approved by the Ministry of Finance. For assets or supplies with a purchase price above JD 5000, the disposition must be recommended by the Ministry of Finance and approved by the Prime Minister's Office.

3.4 Managing Fixed Assets

Fixed assets other than constructions are treated as supplies or inventory items and are referred to as custody items. Custody items are those that are assigned to an individual who will be accountable for them until released, either through completion of project documentation or the return of the asset. All such assets are received at stores and then distributed to the users (staff). Each user is responsible for the asset and is accountable for any damage.

3.5 Maintaining Fixed Assets Register / Master Files

JVA does not maintain records that show the cost of each item, the accumulated depreciation and the net book value. Instead, store records show the fixed assets that were received by each store and delivered to a user (staff). The central store records unit at Deir Alla maintains records for custody items (assets) issued from each store and still in the custody of employees. These records are in the form of a book for each employee that lists the assets in his custody. Each employee must return the items in custody upon resignation. If damaged due to negligence, the custodian will be charged the cost of the asset. For some stores, such as the Amman and SGWA stores, custody item records are kept at the store itself instead of at the central store records unit.

The central workshop at Al Fanoush keeps files for JVA vehicles. These files provide information about each vehicle's purchase price (or insurance coverage value), date of purchase, maintenance history and running cost. The SGWA workshop maintains the same kind of files for SGWA Governate vehicles.

CHAPTER 4 COMPUTER USE

The central workshop at Al-Fanoush has been trying to develop a spare parts stores and job costing system for more than five years. Most of the spare parts data have been entered into the system, but it is still being tested. All other store records are kept manually.

CHAPTER 5 RECOMMENDATIONS FOR MANAGEMENT

The following are the major weaknesses in the inventory and fixed assets cycles with recommendations for improvement and for changes necessary to implement the new FAS. The recommendations are based on findings of the process mapping and are grouped by type into internal control, efficiency, and FAS implementation.

5.1 Internal Control

The central store records unit does not maintain records for the SGWA, King Talal Dam, Wadi Al-Arab Dam, Amman, or the spare parts stores. We recommend that such records be maintained for internal control purposes.

5.2 Efficiency

JVA has seventeen stores in total. Many of these stores are small and are located near other stores. We recommend that such stores to be merged with other stores. Decreasing the number of stores will facilitate the record and control procedures and the computerization of inventory.

5.3 FAS Implementation

- The inventory sheets prepared at the end of the year don't state the cost of items. Including such information will give an indication of the inventory value at each store. We recommend including the cost of inventory items in the year-end count sheets.
- Applying accrual-based accounting requires fixed asset costs to be recorded as balance-sheet items. As stated above, fixed asset costs must be recorded in asset accounts and depreciated over the asset's useful life. The opening balance of the fixed assets account and existing details of fixed asset costs will be needed when implementing the FAS. Accordingly, we recommend forming a team of JVA staff in coordination with FORWARD to start collecting JVA fixed asset data.